

Plex 4/11/2018 2:40 PM Date: Dubois, Paschal  
File: M4130NT0.750W.049

PO No	Supplier Name	Line Ref No	Item No	Terms	Purchased Item	Description	Part No	Project ID	Equipment ID	Order Date	Received Qty	Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days
PO039511	VU	1	Net 30	M304TR0.500W.035	304 Round Tube .500 X .035W :	NATURAL: AISI 304/316 SS				80/4/12/2018	80	80	S060102	Stock	4/11/2018	\$ 1.84 / DCS	0	
		2			M4130NT0.750W.049	4130 Round Tube .750 X .049W :	NATURAL: AISI 4130 STEEL				20	20	S060103	Stock	4/11/2018	\$ 11.48 / DCS	0	
		3			M4130NT0.750W.083	4130 Round Tube .750 X .083W :	MATERIAL: AISI 4130 STEEL				20	20	S060104	Stock	4/11/2018	\$ 5.03 / DCS	0	
														Total:	120		123	

## Purchasing Receipts

Dar Hawkesbury  
1270 Aberdeen St. Hawkesbury, ON K6A 1K7 Canada  
Tel (613) 632-5200



Print

4/11/2018

PURCHASE ORDER  
PO039511

Art Aerospace Ltd.  
270 Aberdeen St  
Markham, ON  
L3R 1K4

AEROSPACE  
**DART**

Supplier:	TWM001-VU	PO No.:	PO039511	PO Date:	4/4/18	Due Date:	4/12/18	Purchase Order:	APR 06 2018
TW Metals	PO Box 933014	Atlanta, GA 31193-3014 USA	Phone: 888 768 5600						
E-MAILED									

Fax: 585 768 5601

Ship To:  
1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

Items

Line Item	Supplier	Part Number	Description	Status	Received Date	Order Date	Quantity	Balance	Unit Price (USD)	Extended Price
Items										
	TWM001-VU	PQ039511	PO Details	4/4/18	Due Date:	4/12/18	Purchase Order Revision:	Revision Date:	Ship-To Contact:	lavoice.ChantalPhone: clavoice@darraero.com

• (613) 632-5200

PO039511

## PURCHASE ORDER

270 Aberdeen St.  
Lat Aerospace Ltd.

AEROSPACE Canada

Order Notes	Procurement Quality Clauses	A005 right of entry	A012 chemical and physical test report	A016 personnel qualification (as applicable)	A026 certification of material conformance	A041 quality management system	A042 draft notification by supplier	A043 retention of quality documents	A048 counterfeit parts avoidance, detection, mitigation and disposition program	A049 supplier awareness	Terms & Condition of Purchasing(Suppliers) And Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit <a href="http://www.darlarespace.com">www.darlarespace.com</a> for further explanation.
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THANK YOU FOR THIS ORDER

<http://www.twmelals.com/invoice-terms.html>

1

SOLD TO:	DART AEROSPACE LTD	SHIPT TO:	34.541 REG. DATE: 04/12/18 CONFIRMED	CUST NUMBER: 1203820	NET WT: 34.541
TERMS:	DONNA SMALLIEY	SHIP BY:	04/09/18	SALESPERSON:	CANADA CN K6A 1K7
F.O.B.:	NET 30 DAYS	VIA:	COMMON CARRIER	CUST ORD NO.:	HAWKSBRUY ON 1270 ABERDEEN ST
TERMS:	SHIPPING POINT	RELEASE NO.:	PREPAID		1270 ABERDEEN ST HAWKSBRUY ON
	PO039511	RECEIVING PHONE:	WIDHT	LINE ITEM DESCRIPTION	0001 36449 SMLS CD 304/L A269 1/2 OD X .035 MA 20' ML
		LENGTH	SHIPPED QTY	INVOICE QTY	PCS 80.000 FT 13.901 WT
		PC: 4	20.000 FT	0002 33047 CDS 4130 6736 3/4 X .049	** 1 TEST REPORTS REQUIRED ** CUSTMER QTY: 0/00/00 EXPIRATION DATE: 17/24 FT INVOICE QTY 20.000 FT SHIPPED QTY 23.500 FT WT 8.618 PCS
		SLB/CL: 7-45	20.000 FT	0003 33096 SMLS CD 4130 6736 3/4 OD X .083 MA	** 1 TEST REPORTS REQUIRED ** CUSTMER QTY: 0/00/00 EXPIRATION DATE: 17/24 FT INVOICE QTY 20.000 FT SHIPPED QTY 20.333 FT WT 12.022 PCS
		MFG: CHINA	20.000 FT	0004 2999.g YX1608590 HT: 4130 6736 3/4 X .049	** 1 TEST REPORTS REQUIRED ** CUSTMER QTY: 0/00/00 EXPIRATION DATE: 17/24 FT INVOICE QTY 20.000 FT SHIPPED QTY 23.500 FT WT 8.618 PCS
		SLB/CL: 7-45	20.000 FT	0005 9991.d 606101 HT: 4130 6736 3/4 X .049	** 1 TEST REPORTS REQUIRED ** CUSTMER QTY: 0/00/00 EXPIRATION DATE: 17/24 FT INVOICE QTY 20.000 FT SHIPPED QTY 23.500 FT WT 8.618 PCS
		MFG: UNITED STATES	20.000 FT	0006 9991.d 606101 HT: 4130 6736 3/4 OD X .083 MA	** 1 TEST REPORTS REQUIRED ** CUSTMER QTY: 0/00/00 EXPIRATION DATE: 17/24 FT INVOICE QTY 20.000 FT SHIPPED QTY 20.333 FT WT 12.022 PCS
		SLB/CL: 158452	20.000 FT	0007 9991.d 603114 HT: 4130 6736 3/4 OD X .083 MA	** 1 TEST REPORTS REQUIRED ** CUSTMER QTY: 0/00/00 EXPIRATION DATE: 17/24 FT INVOICE QTY 20.000 FT SHIPPED QTY 20.333 FT WT 12.022 PCS
		MFG: GERMANY	20.000 FT	0008 49365379 HT: 603114	** 1 CERTS REPORTS REQUIRED ** CUSTMER QTY: 0/00/00 EXPIRATION DATE: 0/00/00 INVOICE QTY 20.000 FT SHIPPED QTY 20.333 FT WT 12.022 PCS

ORDEER NO.: 606654053 ERROM: CRAN PAGE 1

ONeal High-Performance Metals Group



Packing Slip



THANK YOU FOR THIS ORDER

1

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE  
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL  
REVIEW.  
<http://www.twmelts.com/invoice-terms.html>

DATE FILED

DATE SHIPPED

CUST NUMBER: 1203820	NET WT: 34.541	REQ. DATE: 04/12/18	CONFIRMED
SOLD TO: DART AEROSPACE LTD	SHIP TO: 1270 ABERDEEN ST	HAWKSBURY ON	CANADA
DART AEROSPACE LTD	1270 ABERDEEN ST	ONTARIO CANADA	CN K6A 1K7
SALESPERSON: DONNA SMALLIE	SHIP BY: 04/09/18	VIA: COMMON CARRIER	TERMS: NET 30 DAYS
E.O.B.: F.O.O.B.	RELEASE NO.: PO039511	SHIPPING POINT	CUST ORD NO.:
LINE ITEM DESCRIPTION	RECEIVING PHONE:	LINE ITEM DESCRIPTION	BY: Thomas Burgess
BROKERS KUEHNE AND NAGEL LTD	LENGTH	WIDTH	RT 000-
AREA TYPE OF PKG	PACK INFO	PKGS GRAMS WEIGHT	NEW PEN REDDICTRATE
3 HEIGHT LENGTH WIDTH	-----	1.000 104.540 3.0000	282.0000
3 BOX NO. - TWPK18009386	1.000 104.540	UNLOAD TYPE: NONE SPECIFIED	
Orders In Package - 1	-----		

O Neal High-Performance Metals Group



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ORDER NO.: 60654053 FROM: CRAN PAGE 2

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.

<http://www.wmetals.com/invoice-terms.html>

1

TW Metals Certificates that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured in accordance with the material specification.

"CERTIFICATE OF CONFORMANCE"

"TW Metals MSDS data is available on our web site at [www.twmetals.com](http://www.twmetals.com). MSDS data can be found under the Technical Resources Tab, Product Statistics. Data can be found under the Technical Resources Tab, Product Statistics. Data and the TW Metals MSDS's heading. If you do not have web site access & Data and the TW Metals MSDS's heading. If you do not have web site access You may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

SOLD TO:	34.541 REG. DATE: 04/12/18 CONFIRMED	CUST NUMBER: 1203820 NET WT:
DART AEROSPACE LTD	SHIP TO:	SOLD TO:
1270 ABERDEEN ST	DART AEROSPACE LTD	DART AEROSPACE LTD
HAWKSBURY ON	1270 ABERDEEN ST	1270 ABERDEEN ST
CANADA	HAWKSBURY ON	HAWKSBURY ON
CN K6A 1K7	ONTARIO CANADA	ONTARIO CANADA
04/09/18	SHIP BY:	SHIP BY:
TERMS: NET 30 DAYS	27 ENGLEHARD DRIVE	MONROE TWP
F.O.B.: SHIPPIING POINT	P0039511	NJ 08831
CUST ORD NO.:	VIA:	COMMON CARRIER
RELEASE NO.:	HEIGHT:	PREPAID
RECEIVING PHONE:	RELEASER:	RELEASER

O'Neal High-Performance Metals Group

METALS

Packing Slip



Benteler Steel/Tube GmbH  
Postfach 13 40  
33043 Paderborn  
Deutschland  
Tel.: +49 5254 81-0 Fax: +49 5254 13566

**BENTELER** ▽

Steel/Tube

**ABNAHMEPRÜFZEUGNIS EN 10204-3.1**

INSPECTION CERTIFICATE EN 10204-3.1  
CERTIFICAT DE RECEPTION EN 10204-3.1

EN 10204-2005-01

Benteler StahlTubes GmbH - Postfach 1340 - 33043 Paderborn - Deutschland

TW Metals  
The Aboretum, Suite 204  
760 Constitution Drive  
EXTON PA 19341  
USA

Dokument-Nr.: 41-1005860/001/Z  
Document No.:  
No. du document:

Prüf-Nr.:  
Inspection No.:  
No. du certificat:

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Page:

IPED 201465/EU CERTIFIED BY TUEV NORD SYSTEMS  
IDN EN ISO 9001, ISOTS-19949 CERTIFIED BY TUEV NORD CERTI



Kunden-Bestell-Nr.: 46004964 TW M49365379  
Purchase Order No.:  
No. de commande du client:

Herrsteller: Warmstahlwerk Zieherei  
Manufacturer: Producent:  
Herstellerzeichen: Manufacturer's brand:  
Marque du producteur:  
Stamp of the Abnahmbeauftragten: WA  
Stamp of the inspection representative:  
Polycopie du contrôleur:

Produkt: NAHTLOSE STAHLRÖHRE  
Product: SEAMLESS STEEL TUBES  
Produit: TUBES D' ACIER SANS Soudure

Stahlschmelzungsverfahren: ELEKTROSTAHL  
Steelmaking process: ELECTRIC FURNACE  
Procédé d' élaboration de l' acier: FOUR ÉLECTRIQUE

Lieferbedingungen:

Terms of delivery:  
Conditions de livraison:

AMS-T-6736B-08 Type 1, ASTM-A 519-2006, MIL-T-6736B Type 1, AMS6360 Rev. M, AMS 2301K

Maße - Toleranzen:

Dimensions-tolerances:

AMS 2263E-83, Aircraft Type, Seamless, Cold Finished

Stahlsorte:

Steel grade:

GRADE 4130

Lieferzustand:

Delivery condition:

Condition N

Etat de livraison:

ACCEPTED BY

Produktkenntzeichnung:

FSD: BENTELER AMS6360M-AMS-T-6736 B-1-MIL-T-6736 B-1-AMS 2301K 4130 Condition N HEAT-NO.  
CD AQS DIMENSIONS WA GERMANY

Product marking:

Markage du produit:

AEZ = Aufdruckbeschriftung Etching ink marking Gravure à l'encre • FK = Farbkennzeichnung color marking marquage par couleur • FS = Farbschablonierung print, stencil, marquage par peinture • FSD = Farbspritzdrucker Color jet printer, imprimante à jet d'encre de couleur • IK = Laserfertigmarkierung laser marking Marquage laser • PKE = Elektronenstrahlmarkierung ion marking marquage par électronique • PS = Präzisionsstempel die stamp, matrasse, estampage, imprimeant à la presse.

Benteler SteelTube GmbH  
Postfach 13 40  
33043 Paderborn  
Deutschland  
Tel.: +49 5254 81-0 Fax: +49 5254 13666

**BENTELER** ▽  
SteelTube

**ABNAHMEPRÜFZEUGNIS EN 10204-3.1**  
**INSPECTION CERTIFICATE EN 10204-3.1**  
**CERTIFICAT DE RECEPTION EN 10204-3.1**

Dokument-Nr.:  
Document No.:  
No. du document:

Prüf-Nr.:  
Inspection No.:  
No. du certificat:

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Page:  
Page:

Pos.	Stück.	Maße	Gesamtlänge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachlängen
Item	Number	Dimensions	Length total	Weight	Heat No.	Test pressure	Tube number group	Multiple lengths
Poste	Nombré	Dimensions	Longueur totale	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs multiples
			feet	lbs				
0009	80	0 : 750" O.D. * 0 .083" WT 2.0 FT - 24 FT	1830,71	1067	603114			

**Schmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]**

Pos.	Schmelzen-Nr.	C	Si	Mn	P	S	Cr	Mo	Ni	Cu
Item	Heat No.									
Poste	No. de coulée									
0009	603114	0,310	0,240	0,56	0,005	0,001	0,87	0,17	0,08	0,11

**Prüfergebnisse / Test results / Résultats des essais**

**Produktanalyse [%] / Product analysis [%] / Analyse sur produit [%]**

Pos.	Schmelzen-Nr.	C	Si	Mn	P	S	Cr	Mo	Ni	Cu
Item	Heat No.									
Poste	No. de coulée									
0009	603114.	0,300	0,230	0,53	0,006	0,001	0,87	0,17	0,08	0,11

**Prüfergebnisse / Test results / Résultats des essais**

**Die Rohre wurden zerstörungsfrei geprüft:**

The tubes are non destructive tested:

Les tubes ont passé un essai non destructif:

ET-test: acc. to ASTM-A 450; ET- Test method: acc. to ASTM-E 309; for imperfections;  
ET-test: ET with rotating pancake coils; according to EN 10246-3; Imperfections;  
Notch depth: 0,30 mm; notch width < = notch depth; notch length min. 2 x transducer  
width (max. 50 mm)

Augensichtskontrolle: PASSED  
Visual inspection: PASSED  
Examen visuel: PASSED

Materialverwechslungsprüfung: PASSED  
Material conformity test: PASSED  
Vérification de la nuance: PASSED

**Ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques**

Die Probennahme erfolgte an Vielfachlängen.

The sampling was carried out on multiple lengths.

L'échantillonnage était réalisée aux longueurs multiples.

**ABNAHMEPRÜFZEUGNIS EN 10204-3.1**

Dokument-Nr.: 41-1005860/001/Z  
Document No.:  
No. du document:

Prüf-Nr.: Inspection No.:  
No. du certificat:

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Zugversuch längs bei RT, Vollprobe / Tensile test longitudinal at RT, Full section test specimen / Essai de traction longitudinale à TA, Épreuve à la section complète

Pos.	Proben-Nr.	Schmelzen-Nr.	Probenabmessung	Streckgrenze	Zugfestigkeit	Dehnung
Item	Specimen No.	Heat No.	Specimen dimensions	Yield strength	Tensile strength	Elongation
Poste	No. dé. l'éprouv.	No. de coulée	Dimensions de l'éprouv.	Limite élastique	Résistance à la traction	Alongement
Anforderungen						
Requirements						
Exigences						
0009	0.0001	603114	19,04 X 2,12	1.02	Rm 12.3	A2" 1. Formel
0009	00002	603114	19,04 X 2,12	1.03	Rm 12.3	% 1. Formule
					MIN 12.00	1. Formule
					MIN 95	1. Formule

Randentkohlung / Surface decarburization / Décarburation superficielle

Pos. / Item / Poste: 0009

acc. to AMS-6360, partial decarburization outside max. 0.014 in., partial decarburization outside and inside max. 0.018 in., partial decarburization outside; partial decarb. out. max.: 0,356 mm; partial decarb. ins. max.: 0,356 mm

Vermerk / Remark / Remarque

Pos. / Item / Poste: 0009

Certificate remarks: The steel grade corresponds to MIL-T-6736B, AMS 6360M, material free from mercury contamination, FAR BAA: 52-225-1 CANNOT COMPLY, DFARS BAA: 252.225-7001 CAN COMPLY, FAR TAA: 52-225-5 CAN COMPLY, No weld repair has been carried out.

Country of origin of the material and heat: Germany, Aircraft quality steel; acc. to AMS 2301K; see appendix page 1 of 1

Pos. / Item / Poste: 0009

Macroscopic examination: acc. to ASTM-E 381

Pos. / Item / Poste: 0009

Magnetic particle inspec.: acc. to AMS 2301K/ASTM-E 1444, on prematerial.

Pos. / Item / Poste: 0009

Grain size: acc. to ASTM-E 112; Grain size and finer: 5; Grain size: Longitudinal structure micrography, on prematerial

Verkäufer(in) / Sales Personnel / Personne chargée : Mr Schwarz, Tel.: 05254 81-204311, Fax: 204391

Paderborn Schloß Neuhaus; 19.05.2017, TEL.: 05254.81-201767 FAX: 05254.81-201752

Abnahmebeauftragter  
Inspection representative  
Contrôleur

Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.  
We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.  
Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.

Benteler Steel/Tube GmbH  
Residenzstraße 1  
33104 Paderborn  
Germany  
Tel.: 05254.81-0 Fax: 49.5254.13666

**BENTELER** ▄

Steel/Tube

Abnahmeprüfzeugnis EN 10204-3.1 / Anhang  
**Inspection Certificate EN 10204-3.1 / appendix**  
Certificat de réception EN 10204-3.1 / appendix

Dokument-Nr.  
Document No.: 41-1005860/001/Z  
No. de document:

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von  
de

Halbzeuguntersuchung: Stahlsorte 4130 / Semi finished product examination: grade 4130 / Produit semi-fini: nuance 4130

Schmelzen-Nr. Heat No. Coulée No.	Position Item Poste	Körngröße Grain size Grosseur du grain (ASTM-E 112)	Härtbarkeit (min. Anforderungen) Tremperabilité (exigence min.) (ASTM-A 255)	Magnetpulverprüfung Essai à la poudre magnétique (AMS 2301 K/ASTM- 1444)	Makrostruktur Macrostructure test (ASTM-E 381)			
		min. 5	J(5/16") min. 35 HRC	J(8/16") min. 28 HRC	F max. 0,34	S max. 0,25	max. S2	max. R 1
603114	009	9	40	32	0,020	0,015	S 2	R 1
Decarburization Depth		Outside 0,000 mm	Inside 0,000 mm					C 2

Der Stahl ist frei von Quecksilberverunreinigungen. / The steel is free of mercury contamination. / L'acier est libre des contaminations de mercure.

Abnahmevertragspartner  
Inspection representative  
Contrôleur

Paderborn Schloß Neuhaus, 19.05.2017  
Tel.: (0)5254.81-201760 Fax: (0)5254.81-201752

Thomas Gollan

*Quality Assurance*

I certify that the results are true and correct copy of the records prepared and maintained by  
Plymouth Tube Company, Streetcar in compliance with the requirements of the cited specification.  
Chemistry is as reported by the Steel supplier. This test report cannot be reproduced or  
distributed except in full without the written permission of Plymouth Tube.

<b>PRODUCT CERTIFICATION</b> <b>POLYMOULTH TUBE CO - USA</b>											
CUSTOMER P.O.			CUSTOMER PART			QUANTITY			LADING NO		
M49380066			33047			3,078.5 ft			000098303		
CERT DATE			CERT ID / REV						01		
01/25/2018											
<b>CERTIFICATION REQUIREMENTS</b> H07500490J000Z PART DESCRITON OD: 0.7500" Max: 0.7550" Min: 0.7450" Wall: 0.0490" Max: 0.0540" Min: 0.0440" Length: 17.00-124.00' Spec: MIL-T 6736B Seamless Aircraft Grade: 4130 Finish: Cold N											
<b>Chemical Analysis</b> C Mn P S Si Al Cr Mo Ni Pb Cu V Ti Sn .32 .53 .008 .002 .220 .036 .91 .18 .10 .001 .12 .002 .010 .020 .Severity .010 Grain size 5 Freq. Severity Grain size											
<b>Mechanical Properties</b> TESTS UNITS HIGH LOW AVERAGE STD-DEV Yield Tensile Strength Rockwell C Depth OD/ID Decarb % PSI 8 113030 110540 111836 1066 Yield Tensile Strength Rockwell C Depth OD/ID Decarb % PSI 8 12490 117870 119173 998 Yield Tensile Strength Rockwell C Depth OD/ID Decarb % PSI 8 111836 111836 111836 1066											
<b>Additional Specification(s)</b> T JAN 8 X 2018 E S T AMS-T6736 B, AMS 6360M											
ACCEPTED BY <i>Mark Turner</i>											



Quality Assurance

I certify that the results are a true and correct copy of the records prepared and maintained by Plymouth Tube Company. Street or in compliance with the requirements of the cited specification. Chemistry is as reported by the Steel supplier. This test report cannot be reproduced or distributed except in full without the written permission of Plymouth Tube.

End of Certification

The material in this test report is:

- 1) Drawn in the USA
- 2) Free from Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ether (PBDE), and Mercury contamination.
- 3) NAFTA compliant.

This test report data is for the heat Chemistry Stated above.

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	LADING NO	CERT ID / REV	CERT DATE	PART DESCRIPTION	H07500490J000Z
M49380066	33047	3,078.5 ft	00098303	01	01/25/2018		

SHIP TO  
 TW Metals  
 27 Englehardt Drive  
 Monroe Township, NJ 08831  
 USA

MELT SOURCE  
 Benteler Steel & Tube-Germany  
 WORK ORDER  
 022738  
 HEAT NUMBER  
 606101

TRUST YOUR SOURCE ACCEPT NO SUBSTITUTIONS!  
 Phone: (815) 673-1615 Fax: (815) 672-7343



1209 East 12th Street, Street, Illinois 61364  
 Plymouth Tube Co. USA



158452 - 1 / 1

SALES ORDER - LINE / RLS

PRODUCT CERTIFICATION

© 2018 Plymouth Tube Company

## MILL TEST REPORT

Contract No.: TWM P.O. No.: M49366890	Date of Issue: 2017-8-26	Commodity: Seamless Steel Seamless Tubes	Specifications: ASTM A213-17/ASME SA213-15/ASTM A269-15a EAW
---------------------------------------	--------------------------	--	--

Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co	Mechanical Properties									
										Yield Strength (PSI)	Tensile Strength (PSI)	Elongation (% in 2")	Reduction of Area	Z (%)	Hardness	Cold Bend			
Product Analysis	0.022	1.27	0.035	0.004	0.0004	0.38	18.36	8.09	-	44,000/100,000	99,000/100,000	61/62	≥35	HRB≤80	Air Underwater	77/79	Test Results		
Requirement	≤0.035	≤2.00	≤0.045	≤0.030	≤0.100	18.00-20.00	8.00-12.00	-	-	≥30,000	≥30,000	22%	HRB≤80	-	Ultrasonic	-	Test Results		
Ladle Analysis	0.017	1.28	0.033	0.002	0.35	18.22	8.06	-	-	Rp / 0.2%	Rm	HRB≤80	-	-	77/79	Air Underwater	Test Item	Test Results	
Test Item										Test	Test	Test	Test	Test	ASTM E 426	Pressure Test	Corrosion Test	Macroscopic Inspection	Test Item
Requirement										Pass	Pass	Pass	Pass	Pass	ASTM A262 E	End Cut	Appearance	Test Results	Test Item
Test Item										-	-	-	-	-	Passed	Passed	Passed	OK	Test Results
Additional Remarks:	(1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes (2) All tubes tested per ASTM A1016-17 (3) Materials is NACE MR0103-2007 compliant (per Section 2.5) (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1) (5) In Compliance with EN 10204-3.1 (6) In Compliance with ROHS Specification (7) No weld repair performed (8) Free from mercury contamination (9) Free from radioactive contamination (10) Billes melt and pipes/tubes manufactured in China (11) All tubes 100% PMI tested (12) All tubes 100% Eddy Current tested																		
ISO 9001:2008 Certified by CAS 117 16 QU 0053-06 ROS	PEO Certified by SZUTEST 2195-PED-1526002																		

ISO 9001:2008 Certified by CAS 117 16 QU 0053-06 ROS  
 PEI Certified by SZUTEST 2195-PED-1526002  
 CANNOT CERTIFY COMPLIANCE  
 FAR BAA / DFARS BAA / FAR TAA  
 (2) All tubes tested per ASTM A1016-17  
 (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes  
 (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)  
 (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)  
 (5) In Compliance with EN 10204-3.1  
 (6) In Compliance with ROHS Specification  
 (7) No weld repair performed  
 (8) Free from mercury contamination  
 (9) Free from radioactive contamination  
 (10) Billes melt and pipes/tubes manufactured in China  
 (11) All tubes 100% PMI tested  
 (12) All tubes 100% Eddy Current tested

By:	James Shi / Manager	Quality Control Department	We hereby certify that this report is true and correct.
TE SEP 19 2017	James Shi	ACCEPTED	ACCETPTE
			

No. 99, Xuean Middle Road, Dongchen Town, Rugeao City, Jiangsu Province, P.R.China

Jiangsu Pufa Stainless Steel Co., Ltd.

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)			
INSPECTED BY: <b>DAS</b>	SIGNED OFF BY: <b>11</b>			
DATE: <b>9-89 APR 11 2018</b>	SIZE OF TEST SAMPLE			
TYPE OF MATERIAL	HARDNESS / DUROMETER READING			
HRC	HRB	DUR A	DUR D	WEBSTER
RECORD RESULTS BELOW				
CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				

TESTERS LOCATED IN THE QUALITY OFFICE	
DESCRIPTION	Comments
CORRECT MATERIAL PER DRAVING	<i>m11-f-6736</i>
CORRECT GRAIN DIRECTION	<i>(Y) N</i>
CORROSION	<i>(Y) N</i>
CORRECT FINISH	<i>(Y) N</i>
CORRECT THICKNESS	<i>(Y) N</i>
PHOTO REQUIRED	<i>(Y) N</i>
CORRECT MATERIAL IDENTIFICATION	<i>(Y) N</i>
CORRECT M# ON THE MATERIAL	<i>(Y) N</i>
ENGINEERING SIGN OFF	<i>(Y) N</i>
DOES THIS REQUIRE AN EXTRUSION REPORT	<i>(Y) N</i>
SIZE OF TEST SAMPLE	
TYPE OF MATERIAL	
RECORD RESULTS BELOW	
CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.	

MATERIAL CERT REC'D: *YES* DATE: *APR 11 2018*  
 QUANTITY RECEIVED: *20* SHEET SIZE ORDERED: *20*  
 QUANTITY INSPECTED: *20* SHEET SIZE RECEIVED: *20*  
 THICKNESS ORDERED: *W.083* QUANTITY RECEIVED: *W.083*  
 THICKNESS RECEIVED: *W.083* QUANTITY RECEIVED: *W.083*

MATERIAL: *M41301X1750W083* PO / BATCH NO: *Q3551/S060104*

# SPECIFICATION CONTROL DRAWING

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PURCHASE MATERIAL: AISI 4130N SEAMLESS STEEL TUBING

SPECIFICATION: MIL-T-6736 OR AMS 6371, 6360, 6361, 6362, 6373, 6374

PART NUMBER: M4130N [D.DDD W. TTT]  
WHERE: "D.DDD" = OUTER DIAMETER (IN INCHES)  
AND ".TTT" = WALL THICKNESS (IN INCHES)

DIA.

[WALL]

EG. 3/4" TUBING WITH .035" WALL = M4130N10.750W.035

B	REFORMAT DWS TO ACCOMMODATE ADDITIONAL TUBE	RP	12.04.02
A	NEW ISSUE	BY	01.05.06
REV		DATE	
DESIGN	JB		
DRAWN	RP		
CHECKED	AP		
MFG. APPR.	AP	DRAWING NO.	HAWKSBURY, ONTARIO, CANADA
APPROVED	AP	TITLE	M4130N-T
DE APPR.	AP	SCALE	REV. B
DATE	12.04.02	NTS	SHEET 1 OF 1

**RELEASE**  
2012-04-16

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Attach this inspection sheet to the corresponding material cert and remit to be scanned and received in

GC 18 INSPECTION		ENGINEERING SIGN OFF (if required)
INSPECTED BY:	SIGNED OFF BY:	DATE: APR 11 2018 9-69 DAI

RECORD RESULTS BELOW					
CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL	SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING					
TESTERS LOCATED IN THE QUALITY OFFICE					

DESCRIPTION	NCR (Check Y/N)	COMMENTS			
SURFACE DAMAGE	<input checked="" type="checkbox"/>				
CORRECT FINISH	<input checked="" type="checkbox"/>				
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>				
CORROSION	<input checked="" type="checkbox"/>				
CORRECT THICKNESS	<input checked="" type="checkbox"/>				
PHOTO REQUIRED	<input checked="" type="checkbox"/>				
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>				
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	Hand# 606101			
CORRECT MATERI AL IDENTIFICATION	<input checked="" type="checkbox"/>				
CORRECT MATERI AL IDENTITY	<input checked="" type="checkbox"/>				
EXTRUSION REPORT	<input checked="" type="checkbox"/>				
DOES THIS REQUIRE AN	<input checked="" type="checkbox"/>				
ENGINEERING SIGN OFF	<input checked="" type="checkbox"/>				
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>				
DOES THIS MATERIAL REQUIRE	<input checked="" type="checkbox"/>				
SIZE OF TEST SAMPLE					
TYPE OF MATERIAL					
HARDNESS / DUROMETER READING					
TESTERS LOCATED IN THE QUALITY OFFICE					

MATERIAL CERT REC'D: Y DATE: APR 11 2018  
 QUANTITY RECEIVED: 23 SHEET SIZE RECEIVED: 23'  
 QUANTITY INSPECTED: 23 SHEET SIZE ORDERED: 23'  
 MATERIAL CERT REC'D: Y DATE: APR 11 2018  
 QUANTITY RECEIVED: 23 SHEET SIZE ORDERED: 23'  
 THICKNESS RECEIVED: W.O.A.Y SHEET SIZE ORDERED: W.O.A.Y  
 THICKNESS ORDERED: W.O.A.Y SHEET SIZE RECEIVED: W.O.A.Y

MATERIAL: M4130Wf0.250w0.09 PO / BATCH NO: 039511/5060103

## MATERIAL RECEIPT INSPECTION FORM

# SPECIFICATION CONTROL DRAWING

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PURCHASE MATERIAL: ~~ASME~~ A130N SEAMLESS STEEL TUBING  
SPECIFICATION: ~~MIL-T-6736~~ OR AMS 6371, 6360, 6361, 6362, 6373, 6374  
PART NUMBER: M4130N [D.DDD]W.TTT WHERE: "D.DDD" = OUTER DIAMETER (IN INCHES)  
[DIA.] [WALL]

AND ".TTT" = WALL THICKNESS (IN INCHES)

E.G. 3/4" TUBING WITH .035" WALL = M4130N0.750W.035

B	REFORMAT DWG TO ACCOMMODATE ADDITIONAL TUBE	RP	12.04.02
A	NEW ISSUE	BY	01.05.02
REV		DATE	
DESIGN	JB		
DRAWN	RP		
CHECKED	AP		
MFG. APPR.	<i>[Signature]</i>	DRAWING NO.	REV. B
APPROVED	<i>[Signature]</i>	TITLE	SHEET 1 OF 1
DE APPR.		STEEL TUBING	SCALE
DATE	12.04.02	NTS	

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RELEASED  
2012-04-16  
*[Signature]*

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GC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY:	SIGNED OFF BY:	DATE: 9-89 APR 11 2018
DAS		

RECORD RESULTS BELOW					
CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.	HRc	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL	SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING					
TESTERS LOCATED IN THE QUALITY OFFICE					

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	
CORROSION	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	
CORRECT MATERIAL PER-DRAWING	<input checked="" type="checkbox"/>	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	
PHOTO REQUIRED	<input checked="" type="checkbox"/>	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN ENGINEER'S SIGNATURE	<input checked="" type="checkbox"/>	
EXTRUSION REPORT	<input checked="" type="checkbox"/>	
CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.		

MATERIAL CERT REC'D: W.Q35 DATE: APR 11 2018  
 QUANTITY RECEIVED: 80 SHEET SIZE ORDERED: W.Q35  
 QUANTITY INSPECTED: 80 SHEET SIZE RECEIVED: W.Q35  
 THICKNESS RECEIVED: W.Q35 QUANTITY REJECTED: 0  
 THICKNESS ORDERED: W.Q35 SHEET SIZE RECEIVED: W.Q35

MATERIAL: M364TRG500W-Q35 PO / BATCH NO.: Q3931/SO60102

## MATERIAL RECEIPT INSPECTION FORM

# SPECIFICATION CONTROL DRAWING

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D

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING  
 SPECIFICATION: ASTM A213 OR ASME SA213 OR ASTM A269  
 WALL THICKNESS TOLERANCE PER ASTM A269 AS FOLLOWS:

OD (IN)	OD TOL. (IN)	PERMISSABLE WALL TOL.
UP TO $\frac{1}{2}$ "	$\pm 0.005$	$\pm 15\%$
$\frac{1}{2}$ " TO $1\frac{1}{2}$ " EXCL	$\pm 0.005$	$\pm 10\%$
$1\frac{1}{2}$ " TO $3\frac{1}{4}$ " EXCL	$\pm 0.010$	$\pm 10\%$
$3\frac{1}{4}$ " TO $5\frac{1}{4}$ " EXCL	$\pm 0.015$	$\pm 10\%$
5 $\frac{1}{2}$ " TO 8" EXCL	$\pm 0.030$	$\pm 10\%$

PART NUMBER:

M304TRDDDDWTTT  
 OD      WALL

WHERE "D" = OUTSIDE DIAMETER IN INCHES  
 AND "TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M304TR0.375W065

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B	REFORMAT DWG. ADD SPECS (ZN DB-1), REFPAR 08-020A	CP	08.10.20
A	NEW ISSUE	DS	01.06.08
REV	DESCRIPTION	BY	DATE
DESIGN	<b>DART AEROSPACE LTD</b>		
DRAWN	<i>[Signature]</i>		
CHECKED	<i>[Signature]</i>		
MFG. APPR.	<i>[Signature]</i>		
APPROVED	<i>[Signature]</i>		
DE APPR.	<i>[Signature]</i>		
DATE	08.10.20		

**RELEASED**  
*[Handwritten signature]*

DRAWING NO. M304TR TITLE 304/316 ROUND TUBING SHEET 1 OF 1 REV. B SCALE NTS

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